

FIG. 1

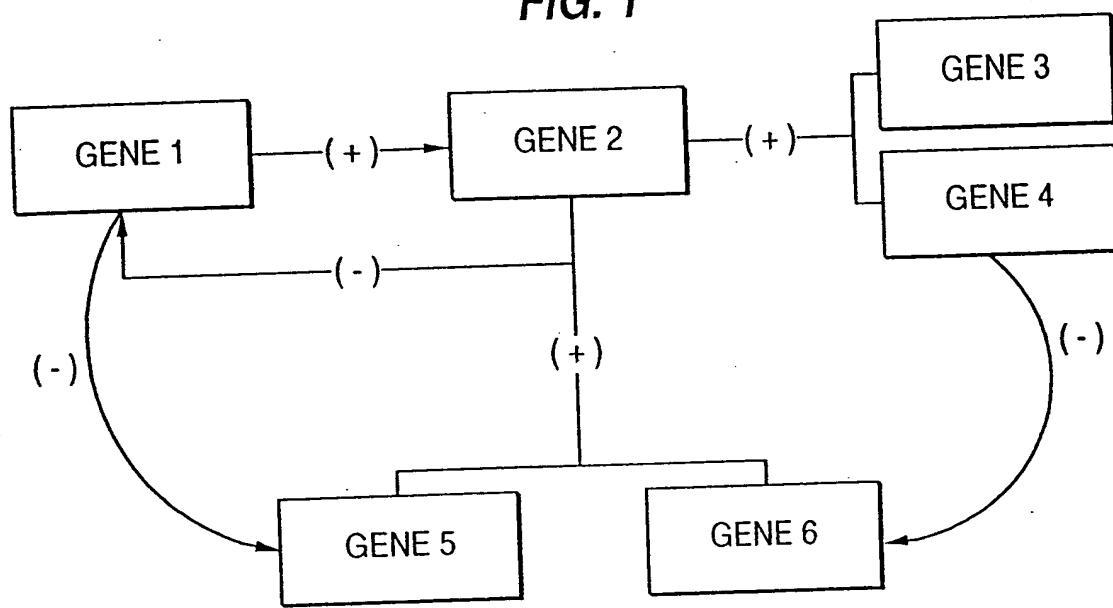


FIG. 2

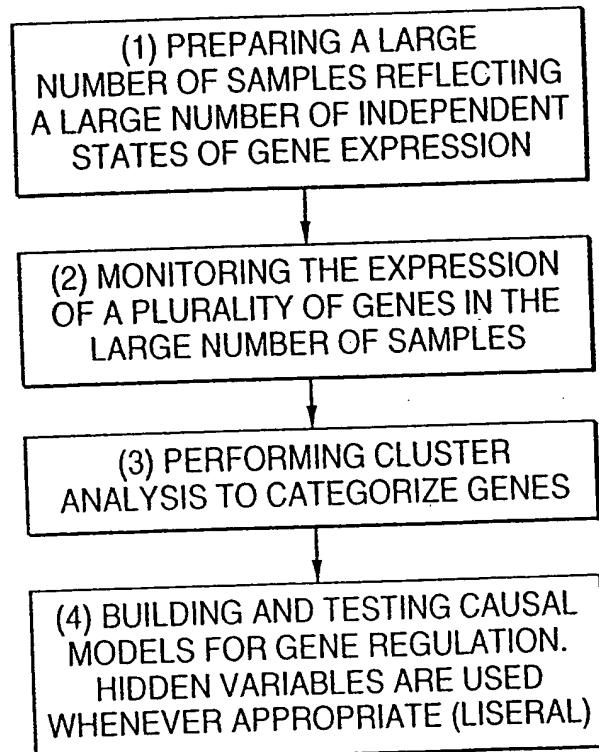


FIG. 3

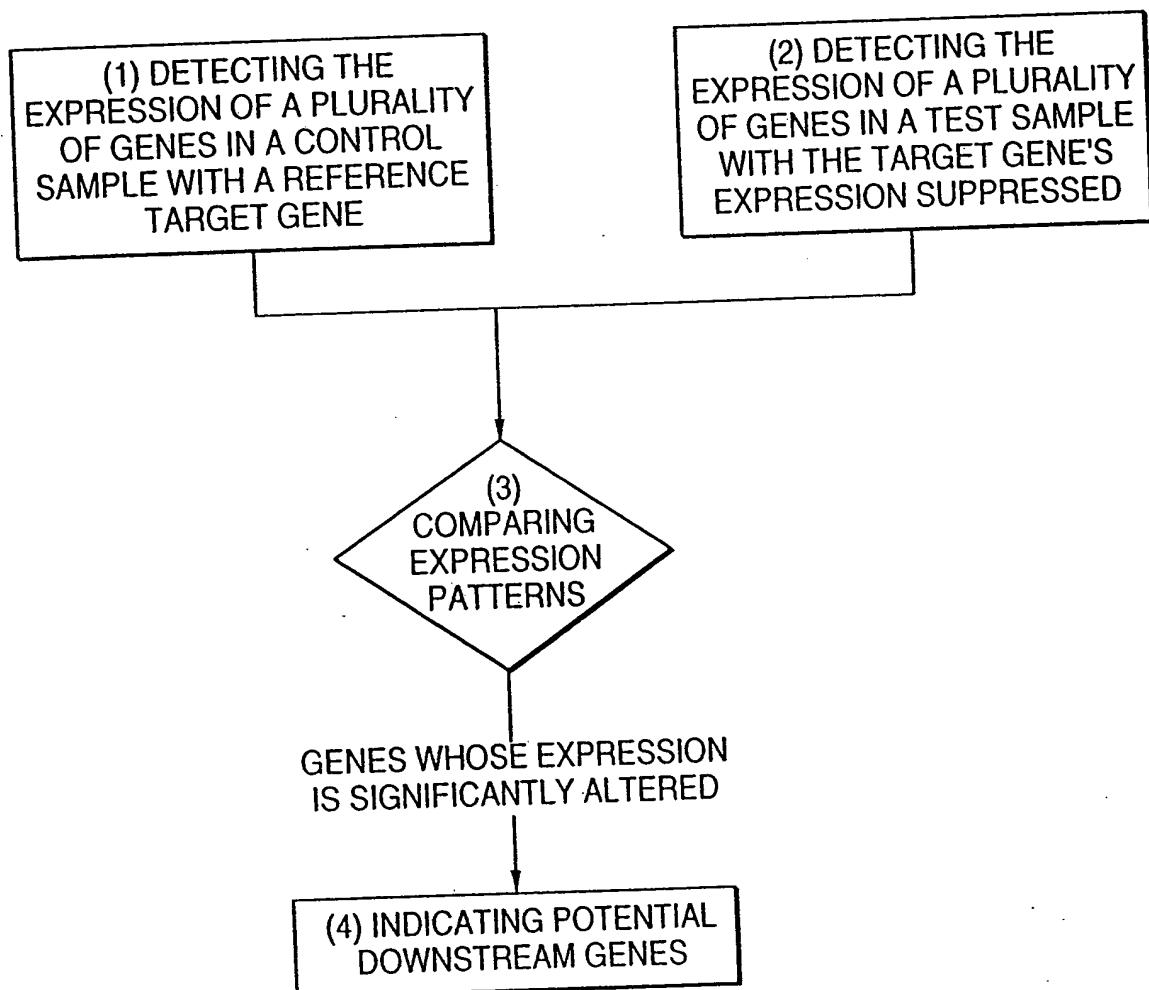
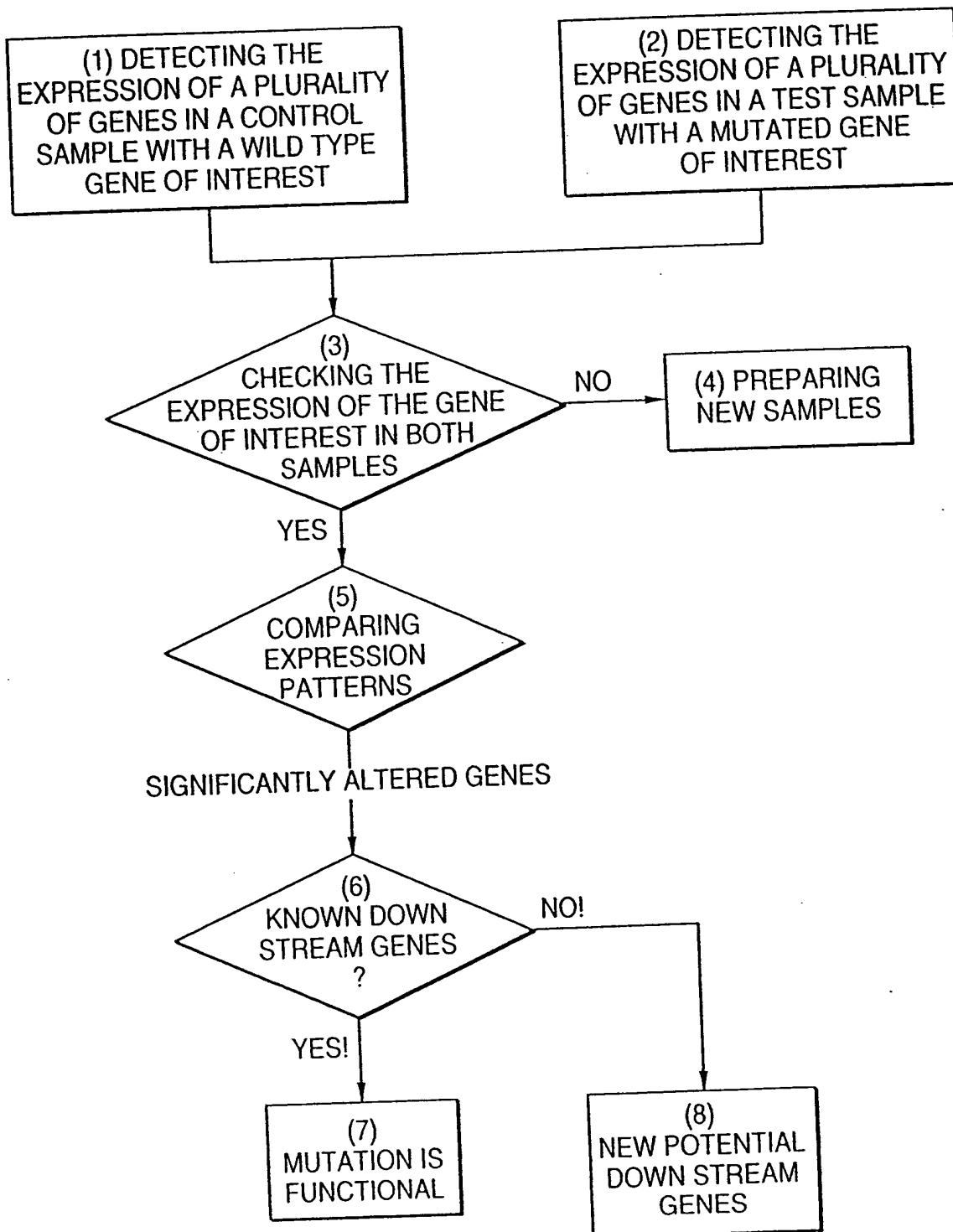


FIG. 4

1007140-02/26/89



0 9 8 7 6 5 4 3 2 1 0 9 8 7 6 5 4 3 2 1

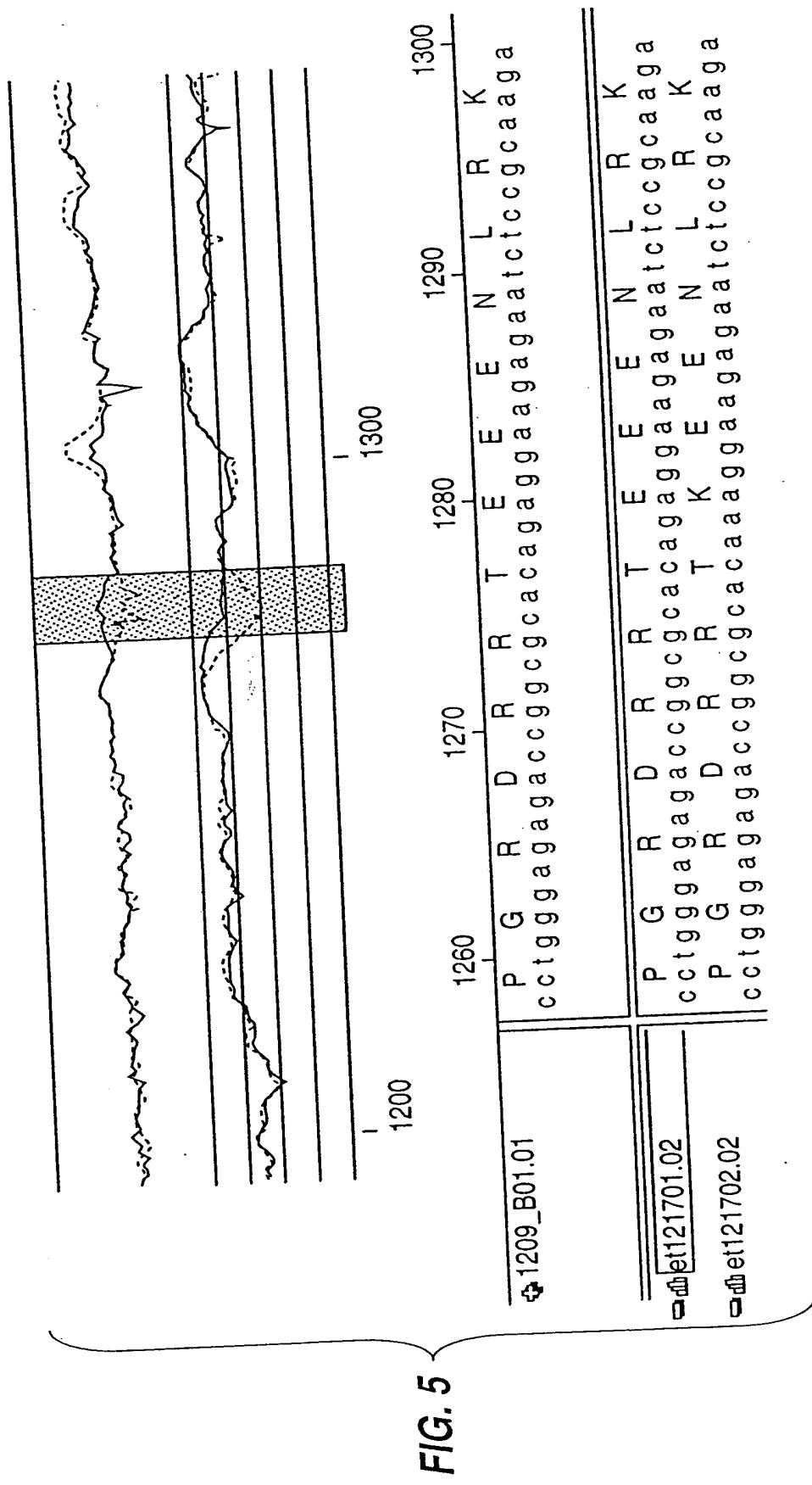


FIG. 6

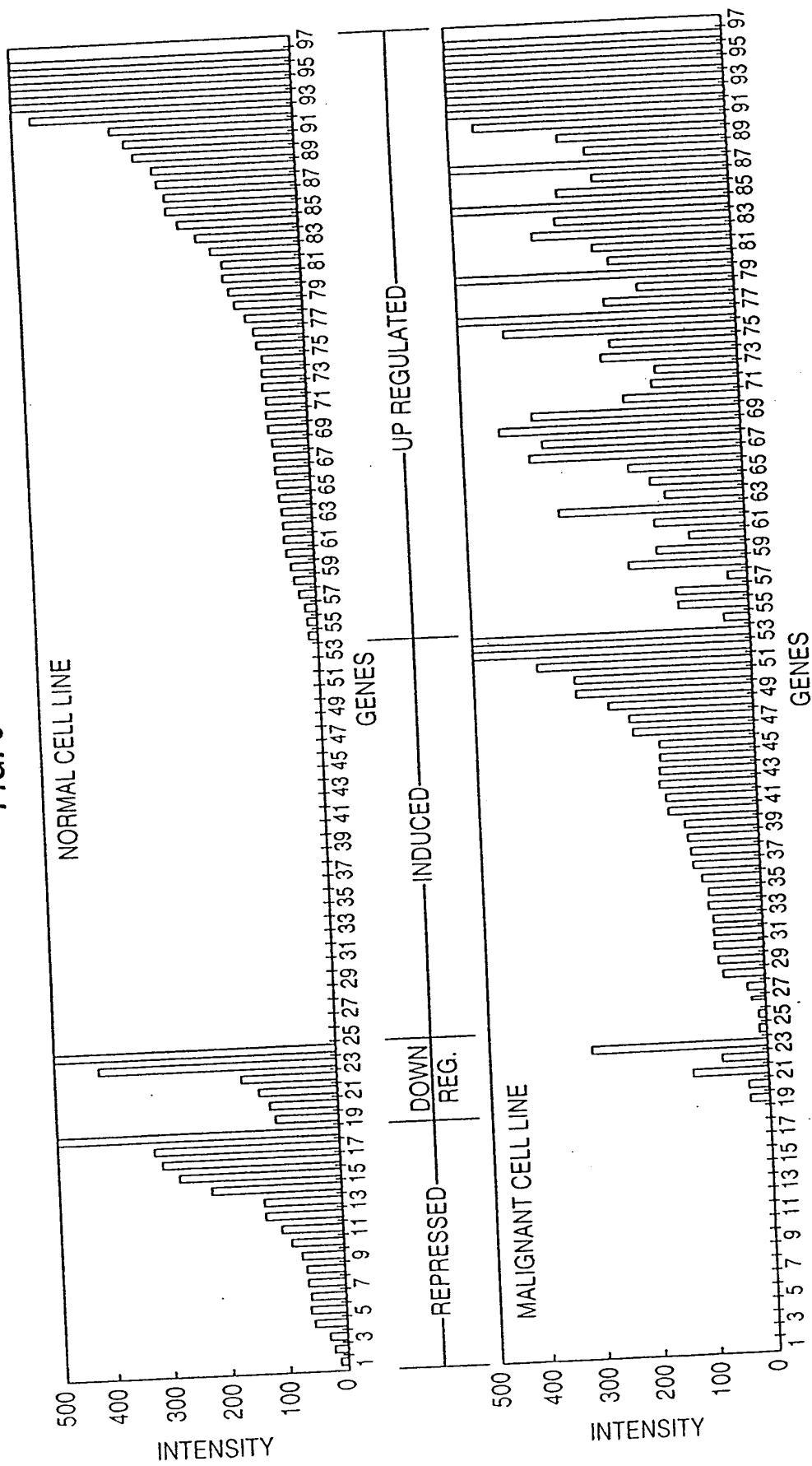
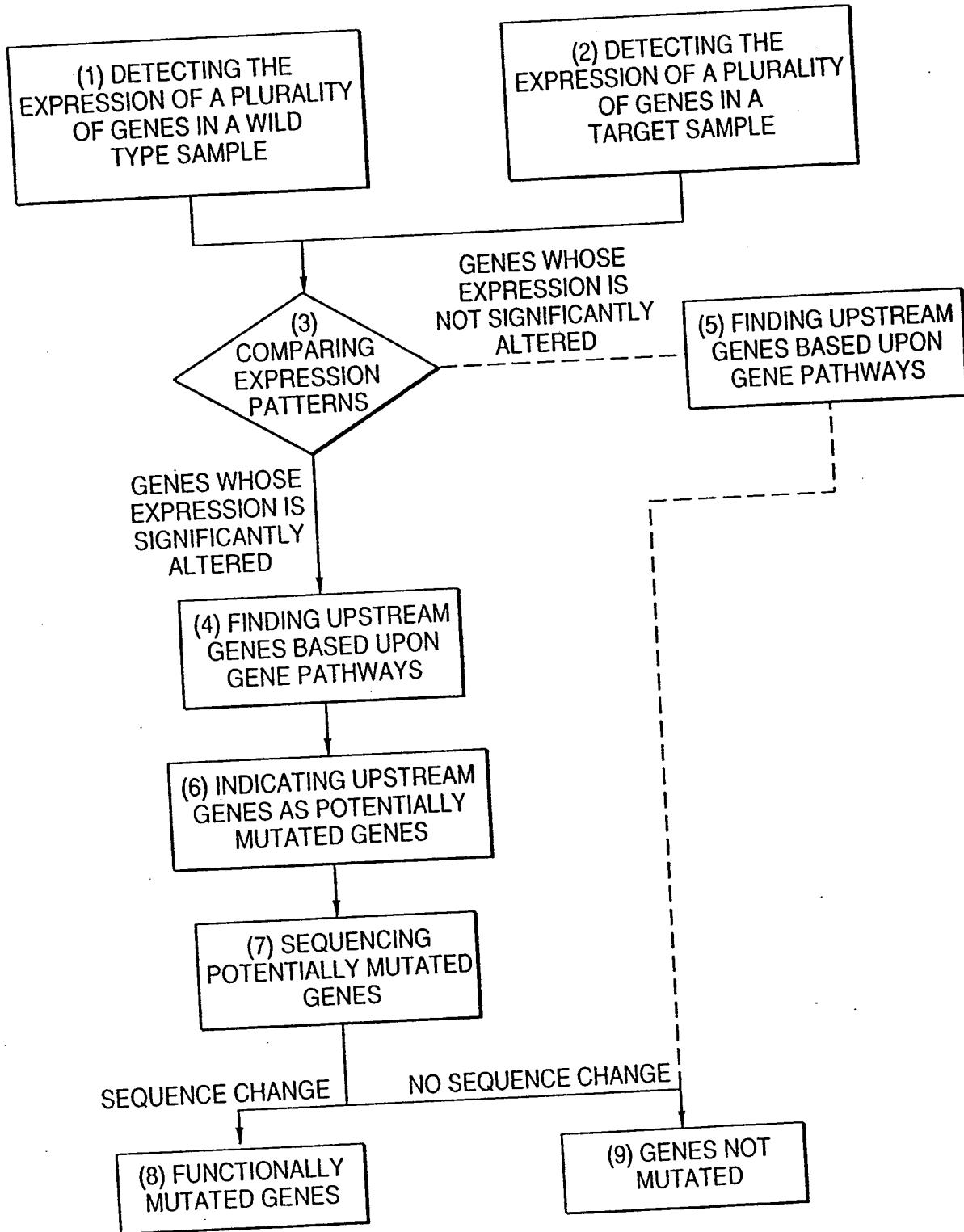


FIG. 7

09835278 0441801



7952 1289 1367 2072

FIG. 8A

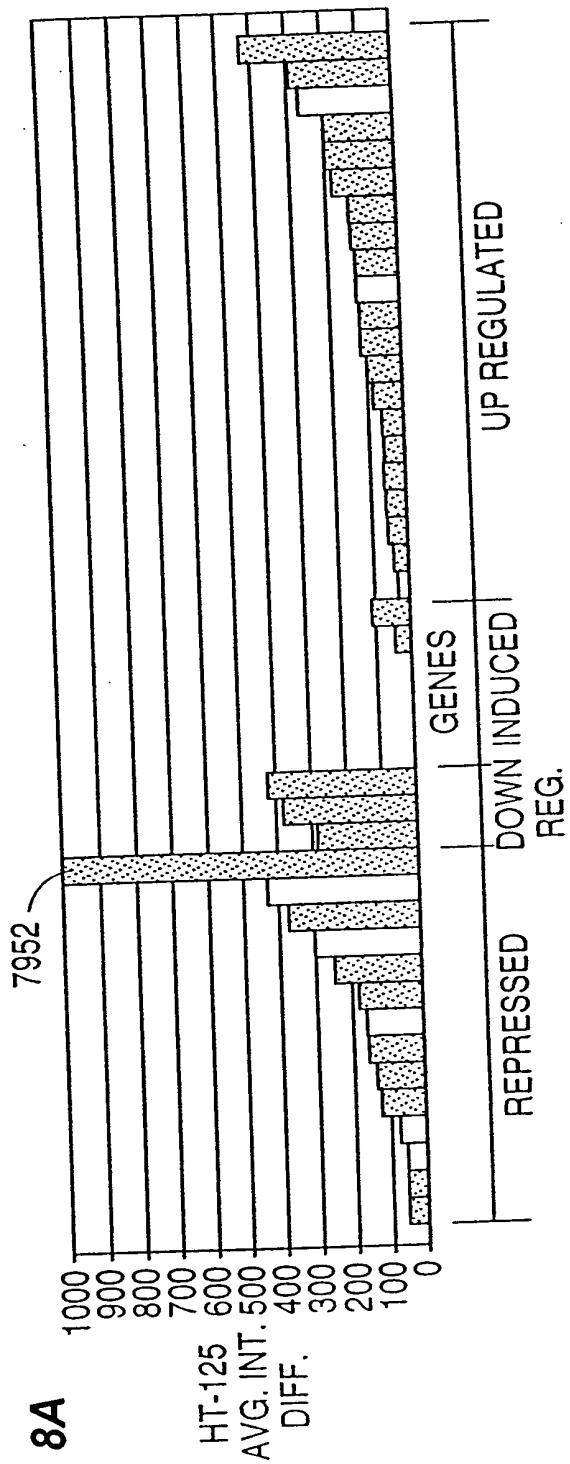


FIG. 8B

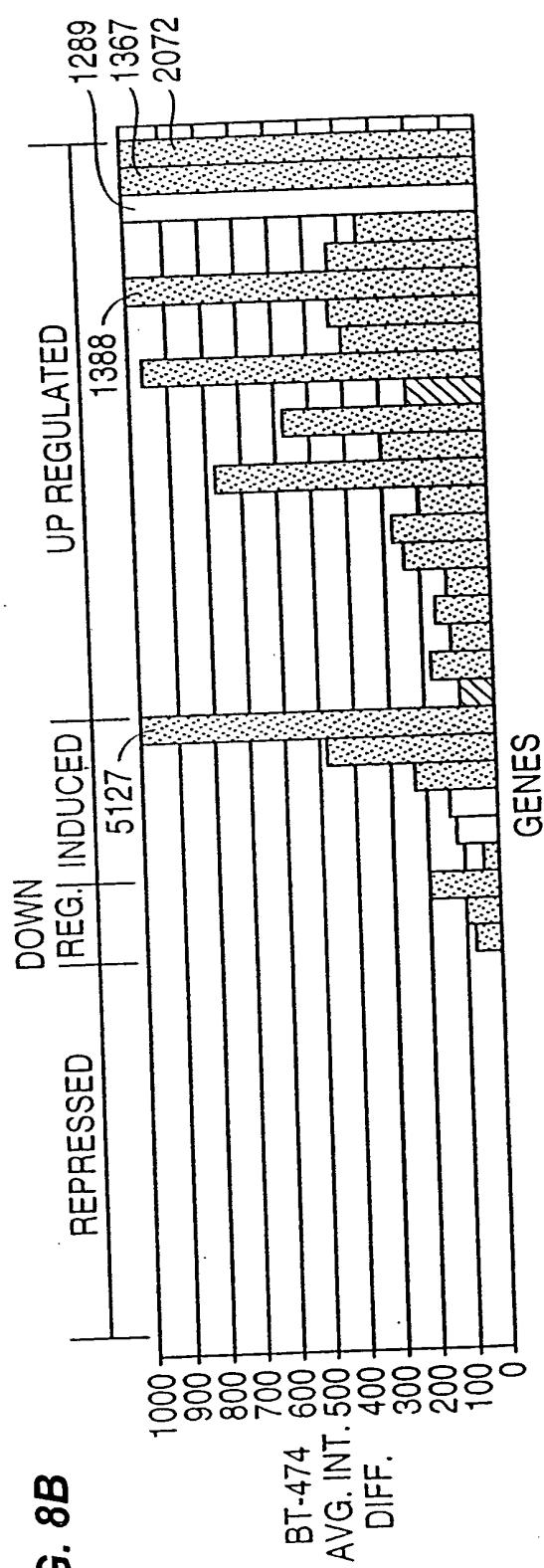


FIG. 9A

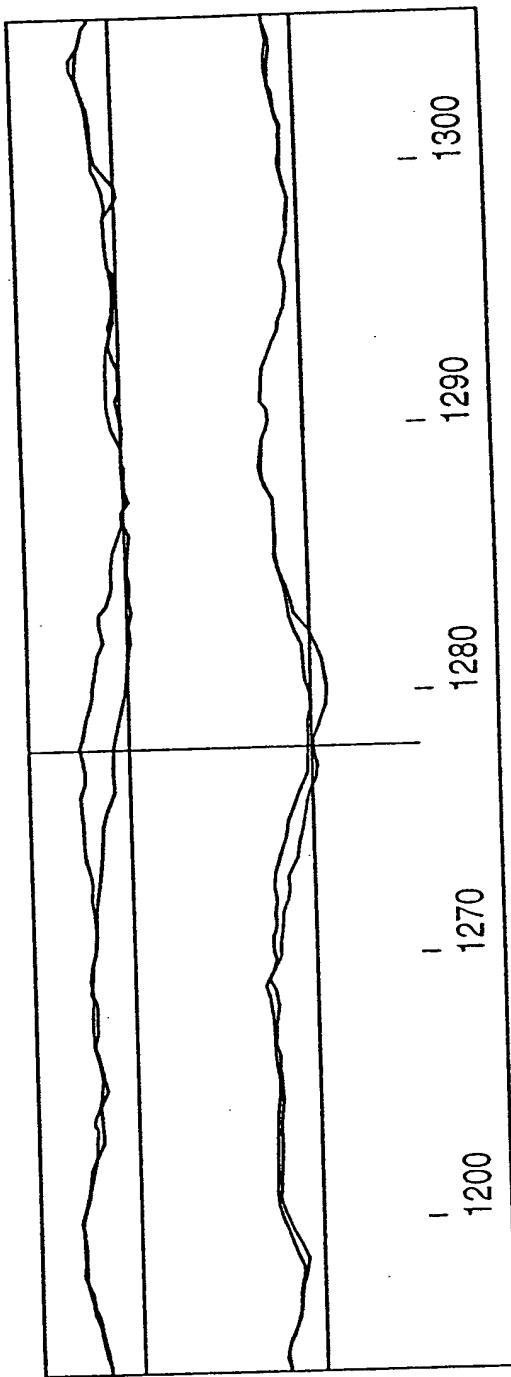


FIG. 9B

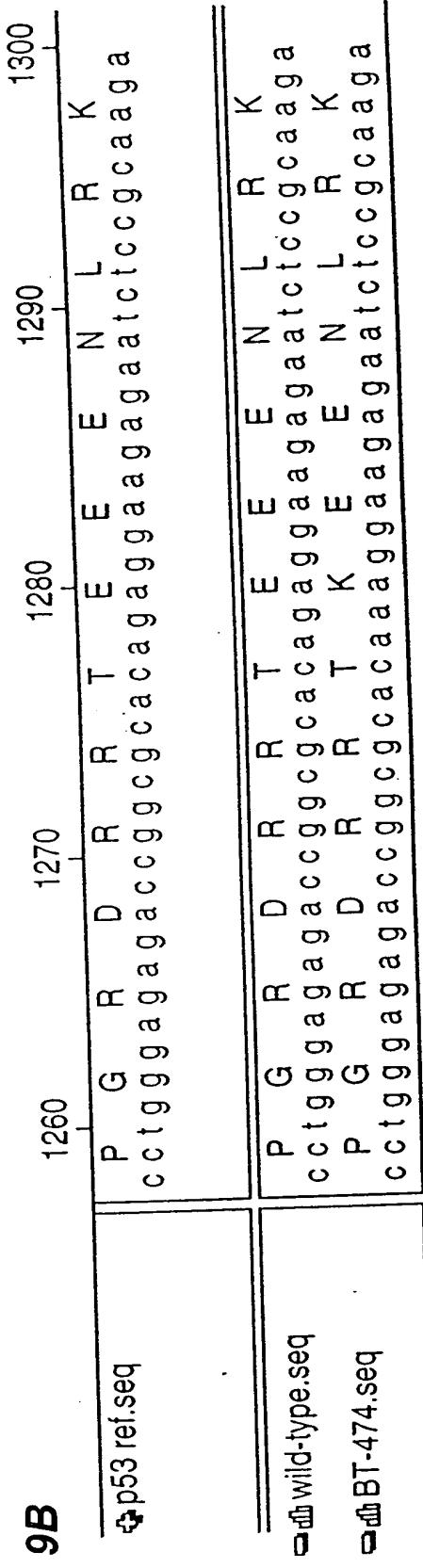


FIG. 10A

Table 3.

## Genes transcriptionally induced in BT-474 vs HT-125

Accession	Nominal copy number: 500-1,000 copies/cell	Nominal copy number: 100-500 copies/cell
X00474	PS2 protein precursor	Transcobalamin I
M1 1730	Her2/neu tyrosine kinase receptor	Mitochondrial matrix protein P1 precursor
R1 0066	cDNA clone 128808 similar to Prohibitin	cDNA clone 69022 similar to Keratin, type II cytoskeletal 8
J05068		CD24
M22382		cDNA clone 71494 similar to Succinate dehydrogenase
T54303		cDNA clone 80945 similar to NF45
L33930		Elongation factor 1 alpha-2
T51499		Human immunophilin
T70062		Adipose specific protein
X70940		cDNA clone 209710 similar to Matrix GLA-protein precursor
M88279		Intestinal trefoil factor
D45370		X Box binding protein-1
H52207		Aldehyde dehydrogenase
L08044		Hepatocyte nuclear factor-3 alpha
M31627		KS1/4 antigen
U37519		cDNA clone 46019 similar to MCM3 homolog
U39840		Proliferating cell nuclear antigen
M26481		cDNA clone 74635 similar to Selenium-binding protein
H09351		
T51961		
T59162		

**FIG. 10B**

		<u>Nominal copy number: 50-100 copinicell</u>
T67986	CDNA clone 82030 similar to Clusterin precursor	cell ad./cell-cell comm. metabolic enz.
U21931	Fructose-1,6-biphosphatase	cell ad./cell-cell comm.
Z13009	E-cadherin	other
M18216	Nonspecific crossreacting antigen	other
U31875	Hep27 protein	translational mach.
L02547	Cleavage stim.factor	other
R89566	CDNA clone 195338 similar to lamin B receptor	other
T98835	CDNA clone 122341 similar to 80.7 KD alpha trans-inducing protein	other
R00451	CDNA clone 123283 similar to Clathrin coat assembly protein AP47	signal transduction
M34309	Human epidermal growth factor receptor, HER3	metabolic enz.
X73424	Propionyl-COA carboxylase beta chain	other
X89985	BCL7B	other
H00645	CDNA clone 149859 similar to Ribonuclease inhibitor	mitochondrial
H41017	CDNA clone 192957 similar to Creatine kinase, ubiquitous mitochondrial precursor	metabolic enz.
R85558	CDNA clone 180221 similar to Inorganic pyrophosphatase	
		<u>Nominal copy number: 10-50 copies/cell</u>
H41006	CDNA clone 177323 similar to Quinol oxidase polypeptide I	other
X51801	OP-1, osteogenic protein	secr. gr. fact.
M69238	Aryl hydrocarbon receptor nuclear translocator	transcription factor
X69392	Ribosomal protein L26.	translational mach.

## FIG. 10C

R88418	cDNA clone 166353 similar to Cleavage stimulation factor, 50 KD subunit	translational mach.
Y00815	Leukocyte antigen related protein	cell ad./cell-cell comm.
H41406	cDNA clone 192943 similar to mouse Gamma-adaptin	protein process.
X92814	HREV107-like protein.	other
X68194	h-Sp1	structural/cytoskeletal
R42070	cDNA clone 30646 similar to Verprolin	other
H19467	cDNA clone 172249 similar to Ankyrin R	signal transduction
R10620	cDNA clone 128901 similar to Tyrosine-protein kinase CSK	metabolic enz.
L29254	L-iditol-2 dehydrogenase gene	other
M34458	Lamin B1	other
R53942	cDNA clone 40026 similar to ADP ATP carrier protein, heart/skeletal muscle isoform	cell-cycle
T96666	cDNA clone 121357 similar to Cyclin-dependent kinase interactor 1	other
R44863	cDNA clone 33477 similar to Phenylalkylamine binding protein	signal transduction
D43772	GRB-7	DNA replication
X67334	BM28	translational mach.
T78606	cDNA clone 113492 similar to Translational activator GCN1	metabolic enz.
D42047	KIAA0089 Human mRNA gene for Mouse glycerophosphate dehydrogenase-related	transcription factor
X58072	hGATA3	cell ad./cell-cell comm.
M34344	Platelet glycoprotein IIb	transcriptional mach.
R46731	cDNA clone 36517 similar to Transcriptional regulatory protein RPD3	transcription factor
U33819	Zinc-finger DNA binding protein	other
R23246	cDNA clone 131094 similar to Goliath protein	cell ad./cell-cell comm.
H64489	cDNA clone 238846 similar to Leukocyte antigen CD3	other
T47377	cDNA clone 571035 similar to S-100P protein	

## FIG. 10D

H05814	cDNA clone 44151 similar to Putative ATP-dependent RNA helicase	translational mach.
X83618	3-hydroxy-3-methylglutaryl coenzyme A synthase	metabolic enz.
U14550	Sialyltransferase SThM	metabolic enz.
R55185	cDNA clone 154654 similar to Galactoside 3(4)-L-fucosyltransferase	metabolic enz.
V00568	C-myc	transcription factor
L47738	Inducible protein	other
M20560	Lipocortin-III	metabolic enz.
T47964	cDNA clone 71549 similar to Purine nucleoside phosphorylase	transcription factor
T90192	cDNA clone 110564 similar to DNA-binding protein MEL-18	signal transduction
U20285	GPS1	other
M81637	Grancalcin	signal transduction
H19201	cDNA clone 508873 similar to Guanine nucleotide diss. stim.	transcription factor
X03635	Oestrogen receptor	structural/cytoskeletal
X52426	Cytokeratin 13	signal transduction
R37799	cDNA clone 270833 similar to Protein phosphatase PP2A	signal transduction
X03484	Rat oncogene	signal transduction
L11284	ERK activator kinase, MEK1	transcription factor
X70683	SOX-4	other
R72644	cDNA clone 156489 3' similar to Choline kinase	signal transduction
M97370	Adenosine receptor (A2)	cell ad./cell-cell comm.
X76180	Lung amiloride sensitive Na+ channel protein	cell ad./cell-cell comm.
R45583	cDNA clone 35271 similar to NG-CAM related cell adhesion molecule	transcription factor
M13665	C-myb	other
D26018	Human mRNA (KIAA0039) for ORF	other
H54752	cDNA clone 203275 similar to Activator 1 37 KD subunit	signal transduction
H04239	cDNA clone 151776 similar to Developmental protein seven in absentia	

**FIG. 10E**

D21852	Human mRNA (KIAA0029) for ORF	other
M57730	Immediate early response protein B61 precursor	secr. gr. fact.
M16768	Human T-cell receptor gamma chain VJCl-CII-CIII region	other
X13956	12S RNA induced by poly(r), poly(C) and Newcastle disease virus	other
U07349	Human B lymphocyte serine/threonine protein kinase	signal transduction
D00726	Ferrochelatase	metabolic enz.
M54968	K-ras oncogene	signal transduction
D31661	ERK tyrosine kinase	signal transduction
U21108	Human dual specific protein phosphatase	signal transduction
X52228	Secreted epithelial tumour mucin antigen	other
X13425	Pancreatic carcinoma marker GA733-1	other
R52511	cDNA clone 39763 similar to Gamma-interferon-inducible protein IP-30 precursor	other
X83425	Lutheran blood group glycoprotein.	cell ad./cell-cell comm.
U13045	Human nuclear respiratory factor-2 subunit beta 1	transcription factor
M20132	Androgen receptor	transcription factor
L07615	Neuropeptide Y receptor Y1	transcription factor
M86699	Human kinase TTK	signal transduction
R43936	cDNA clone 32974 similar to Serine/threonine-protein kinase STE20	metabolic enz.
X60787	Transcription factor ILF	signal transduction
X74570	Gal-beta(1-3/1-4)GlcNAc alpha-2,3-sialyltransferase	transcription factor
U30255	Phosphogluconate dehydrogenase	metabolic enz.
D11466	For Pig N-acetylglucosaminyl-phosphatidylinositol	other
M64347	Novel growth factor receptor	signal transduction
R43064	cDNA clone 32719 similar to E2 protein	transcription/replication
M60724	p70 ribosomal S6 kinase alpha-1	mitochondrial
U34074	A kinase anchor protein S-AKAP84	cell-cycle
H87205	cDNA clone 220505 similar to cell division protein kinase 5	other
X57348	cDNA clone 9112 similar to H.sapiens mRNA	structural/cytoskeletal
X07696	Keratin, type I cytoskeletal 15	translational mach.
X13482	U2 small nuclear ribonucleoprotein A'	

**FIG. 10F**

	<u>Nominal copy number: 1-10 copies/cell</u>	
D63879	Human mRNA for ORF (KIAA0196)	other metabolic enz.
M90656	Gamma-glutamylcysteine synthetase (GCS)	other
H13822	cDNA clone 148291 similar to Zinc finger autosomal protein	transcriptional mach.
X83928	Transcription factor TFIID subunit TAFI128	DNA replication
H52655	cDNA clone 235891 similar to DNA polymerase beta	signal transduction
R42095	Tyrosine kinase SEK receptor precursor	other
D13633	Human mRNA for ORF (KIAA0008)	other
U13616	Human ankyrin G	other
M74558	SII mRNA	transcriptional mach.
X63468	Transcription factor TFIIE alpha	other
M30704	Amphiregulin	metabolic enz.
U11700	Copper transporting ATPase	metabolic enz.
H78807	cDNA clone 230127 similar to D-beta-hydroxybutyrate dehydrogenase precursor	translational mach.
M58411	p80-collin	signal transduction
U25975	Serine kinase, hPAK65	signal transduction
R42898	cDNA clone 32410 similar to JNK activating kinase 1	signal transduction
J03258	Vitamin D3 receptor	signal transduction

## FIG. 10G

Genes transcriptionally repressed in BT-474 vs HT-125

Accession	Nominal copy number: 500-1,000 copies/cell	Functional category
H41129	CDNA clone 175539 similar to Galectin-1	cell ad./cell-cell comm. protein process.
T51261	CDNA clone 70133 similar to Glia derived nestin precursor	
R91912	Placental calcium-binding protein	other
M77349	Transforming growth factor-beta induced gene product	other
M35878	Clone HL 1006d similar to IGFBP3	other
T92451	cDNA clone 118219 similar to Tropomyosin	structural/cytoskeletal
M95787	Smooth muscle protein 22-alpha	structural/cytoskeletal
J03210	Collagenase type IV mRNA, 3' end.	ECM
L16895	Human lysyl oxidase	cell ad./cell-cell comm.
X57351	Interferon-inducible protein 1-8D	other
T99774	cDNA clone 122884 similar to Follistatin precursor	cell ad./cell-cell comm.
J03464	Clone pHCo2A1 similar to Procollagen alpha 2(I)chain precursor	ECM
T61333	cDNA clone 78034 similar to Metalloproteinase inhibitor 3 precursor	protein process.
X78947	Connective tissue growth factor	secr. gr. fact.
R49855	cDNA clone 152637 similar to Coagulation factor V precursor	other
T54767	cDNA clone 73802 similar to Sparc precursor	cell ad./cell-cell comm.
L01131	Human decorin	protein process.
L16510	Cathepsin B	protein process.
H87343	cDNA clone 252394 similar to Protein-lysine 6-oxidase precursor	structural/cytoskeletal
M69066	Moesin	other
X91911	RTvP-1	protein process.
T95046	CDNA clone 120085 similar to Protease do precursor	structural/cytoskeletal
X15882	Collagen VI alpha-2 C-terminal globular domain.	other
M69054	IGFBP6	metabolic enz.
X55740	Placental cDNA coding for 5' nucleotidase	structural/cytoskeletal
H80342	CDNA clone 241122 similar to Tubulin beta chain	DNA replication
U21090	DNA polymerase delta	signal transduction
Z18951	Caveolin-1	

**FIG. 10H**

<u>Nominal copy number: 50-100 copies/cell</u>	<u>other</u>
U39050 H62466	Human mitogen-responsive phosphoprotein cDNA clone 209654 similar to Collagen alpha 3(VI) chain
X14787	Thrombospondin cDNA clone 183508 similar to Peripheral myelin protein 22
H45474	cDNA clone 186308 similar to Annexin I
H29761	cDNA clone 186308 similar to Annexin I
M11718	Alpha-2 type V collagen
X12369	Tropomyosin alpha chain, smooth muscle
T54317	cDNA clone 69040 similar to RAS-related protein
U20280	Cathepsin X
H23235	cDNA clone 52096 similar to APDGFR precursor
R67072	cDNA clone 140763 similar to GAP junction alpha-1 protein
R72104	cDNA clone 155771 similar to Bone morphogenetic protein 1 precursor
U21128	Lumican ECM

## FIG. 10I

M23419	Initiation factor 5A	translational mach.
L34056	Cadherin-11	signal transduction
M64110	Caldesmon	structural/cytoskeletal
X72012	Endoglin	signal transduction
R70383	cDNA clone 155241 similar to Vitellogenin II precursor	other
T69425	cDNA clone 82963 similar to Alpha-2 macroglobulin precursor	protein process.
H02540	cDNA clone 151270 similar to Cathepsin L precursor	protein process.
X05232	Stromelysin	protein process.
T54278	cDNA clone 69199 similar to Tissue inhibitor of metalloproteinases II precursor	ECM
M24486	Prolyl 4-hydroxylase alpha subunit	protein process.
H80975	cDNA clone 240954 similar to Plasma protease C1 inhibitor precursor	signal transduction
H06706	cDNA clone 44616 similar to RAS-related protein ORAB-1	signal transduction
M33210	Colony stimulating factor 1 receptor	metabolic enz.
T96364	cDNA clone 121066 similar to M-phase inducer phosphatase 3	

## FIG. 10J

	<u>Nominal copy number: 10-50 copies/cell</u>	
J02814	Chondroitin sulfate proteoglycan core protein	cell ad./cell-cell comm.
D14874	Adrenomedullin	other
L35594	Autotaxin	cell ad./cell-cell comm.
R23249	cDNA clone 131100 similar to Preprotein translocase secy subunit	other
L13923	Fibrillin	ECM
T91563	cDNA clone 118372 similar to CD44 antigen, epithelial form precursor	signal transduction
J05017	Aldose reductase	other
M55210	(LAMB 2) gene Laminin B2 chain	ECM
M13755	Interferon-induced 17 KD protein	other
U32114	Caveolin-2	signal transduction
X17097	PSG9	other
X52679	Sphingomyelin phosphodiesterase	protein process.
Z48481	Membrane-type matrix metalloproteinase 1	protein process.
U24389	Lysyl oxidase-like protein	cell ad./cell-cell comm.
M85289	Heparan sulfate proteoglycan	cell ad./cell-cell comm.
D29992	Placental protein 5	other
Y00711	L-lactate dehydrogenase H chain	cell ad./cell-cell comm.
R50499	Fibrinogen beta chain precursor	signal transduction
U09278	Fibroblast activation protein	cell ad./cell-cell comm.
H15811	cDNA clone 159533 similar to Platelet membrane glycoprotein IIb precursor	ECM
X82494	Fibulin-2	other
H37925	cDNA clone 190993 similar to Interferon-activatable protein 204	protein process
J02685	Plasminogen activator inhibitor-2	cell-cycle
U03106	Wild-type p53 activated fragment-1, p21WAF1/CIP1	cell ad./cell-cell comm.
D13665	Osteoblast specific factor 2	cell ad./cell-cell comm.
T55741	cDNA clone 73645 similar to Myosin light chain kinase	other
U18467	Pregnancy-specific beta 1-glycoprotein 7	ECM
X06700	Pro-alpha1 (III) collagen	other
H56627	cDNA clone 231424 similar to Glutathione S-transferase P	ECM
T41199	cDNA clone 62328 similar to Laminin gamma-1 chain precursor	other
T59895	cDNA clone 76290 similar to Ubiquitin carboxyl-terminal hydrolase isozyme L1	cell ad./cell-cell comm.
T68426	CD81 antigen	transcription factor.
X13810	OTF-2	protein process.
T50086	cDNA clone 70213 similar to Alpha-1-antiproteinase F precursor	

## FIG. 10K

D28137	Human mRNA for BST-2	cell ad./cell-cell comm.
Z37976	Latent TGF-beta binding protein	other
X02492	Interferon-induced protein 6-16 precursor	other
T66960	cDNA clone 66508 3' similar to Nuclear factor 1 clone PNF1/X	other
H88938	Keratinocyte growth factor precursor	secr. gr. fact.
M29150	Interleukin 6	secr. gr. fact.
X05231	Collagenase	protein process.
X68148	p66shc	signal transduction
D31762	KIAA0057 for ORF	cell-cycle
T61090	cDNA clone 83635 similar to Endoglin precursor	signal transduction
T53889	cDNA clone 78017 similar to Complement C1R component precursor	other
X58288	hRPTP <sub>u</sub> gene for protein tyrosine phosphatase	signal transduction
T51913	cDNA clone 72466 similar to Alpha crystallin B chain	other
X17042	Hematopoietic proteoglycan core protein	cell ad./cell-cell comm.
M55621	N-acetylglucosaminyltransferase	protein process.
H85111	cDNA clone 220183 similar to EBNA-2 nuclear protein	transcription factor
X63613	Pentaxin	other
M24594	Interferon-induced 56 KD protein	secr. gr. fact.
R36467	cDNA clone 136821 similar to Transforming growth factor beta 1 precursor	transcription factor
M87503	Transcriptional regulator ISGF3 gamma subunit	cell ad./cell-cell comm.
X13097	Tissue type plasminogen activator	other
X60201	Brain-derived neurotrophic factor	other
M63509	Human glutathione transferase M2	ECM
M92642	Alpha-1 type XVI collagen	other
M80469	MHC class I HLA- $\beta$	

**FIG. 10L**

T60855	cDNA clone 76721 similar to Calcineurin B subunit isoform 1	signal transduction
X16707	Fra-1	transcription factor
H54425	cDNA 203126 similar to Metallothionein-II	other
L04733	Kinesin light chain	structural/cytoskeletal
R46493	cDNA clone 36200 similar to Tissue factor precursor	ECM
M29696	Interleukin-7 receptor alpha chain precursor	signal transduction
T97948	cDNA clone 1211916 similar to Calponin H2, smooth muscle	structural/cytoskeletal
R43953	cDNA clone 33191 similar to Opioid binding protein	cell ad./cell-cell comm.
R16659	cDNA clone 129622 similar to Tissue factor pathway inhibitor	cell ad./cell-cell comm.
U37019	Smooth muscle cell calponin	structural/cytoskeletal
M96322	Gravin	cell ad./cell-cell comm.
T788624	cDNA clone 113518 similar to Carbonyl reductase	other
M60974	GADD45	cell-cycle
X60708	pcHDp7	protein process.
M62424	Thrombin receptor precursor	signal transduction
R94513	cDNA clone 197667 similar to STAT2	protein process.
V00523	HLA-DR alpha	other
H65605	cDNA clone 209780 similar to Prothrombin precursor	signal transduction
X76488	Lysosomal acid lipase	protein process.
R12676	cDNA clone 129303 similar to Complement factor H-like protein 1 precursor	other
X06985	Heme oxygenase	metabolic enz.
R60908	cDNA clone 42188 similar to protein-tyrosine kinase	signal transduction
U25779	Human chromosome 17q21 mRNA clone 694.2	other
X12496	Erythrocyte membrane sialoglycoprotein beta	other
T71207	cDNA clone 110162 similar to RAS-related C3 Botulinum toxin substrate 2	signal transduction

## FIG. 10M

R52961	cDNA clone 40303 similar to Shc transforming protein 46.8 KD and 51.7 KD precursor signal transduction
M97676	Homeobox protein
R95874	cDNA clone 199264 similar to LTR5 Retrovirus-related ENV polyprotein
T86469	cDNA 114641 similar to Collagen alpha 3(VI) chain
R48243	cDNA clone 153769 similar to RAS-related protein RHA1
U19969	Two-handed zinc finger protein ZEB
R99935	Nominal copy number: 1-10 copies/cell
T64142	cDNA clone 201757 similar to DNA-directed RNA pol I largest subunit
H74007	cDNA clone 80145 similar to Proteolipid protein PPA1
H47650	cDNA clone 232946 similar to Serine/threonine-protein kinase SGK
J04080	PTS system, sucrose-spec. IIABC component
D90226	Complement component C1r
X03348	Human mRNA for beta-glucocorticoid receptor
R32804	cDNA clone 135146 similar to Glucose transporter type 3
M60618	Nuclear autoantigen SP-100
L13463	Human helix-loop-helix basic phosphoprotein
M26683	Human interferon gamma treatment inducible mRNA.
M63838	Interferon-gamma induced protein
X73608	Testican
M88338	Serum protein MSE55
T52698	cDNA clone 67233 similar to Protein-tyrosine phosphatase 1B
U16307	Glioma pathogenesis-related protein
R35976	cDNA clone 137079 similar to CD30 ligand
X16665	HCX2H
R42244	cDNA clone 30543 similar to Antigen peptide transporter 1
U19718	Human microfibril-associated glycoprotein
T85165	cDNA clone 111345 similar to SRC substrate P80/85 proteins
R45687	Cyclin G
L22473	Bax

Message quantities are expressed as nominal copy number per cell relative to hybridization intensities of known copy number spiked controls. Abbreviations: secr. gr. fact., secreted growth factor; ad., adhesion; comm., communication; mach., machinery; enz., enzyme; pross., processing; ECM, extracellular matrix.